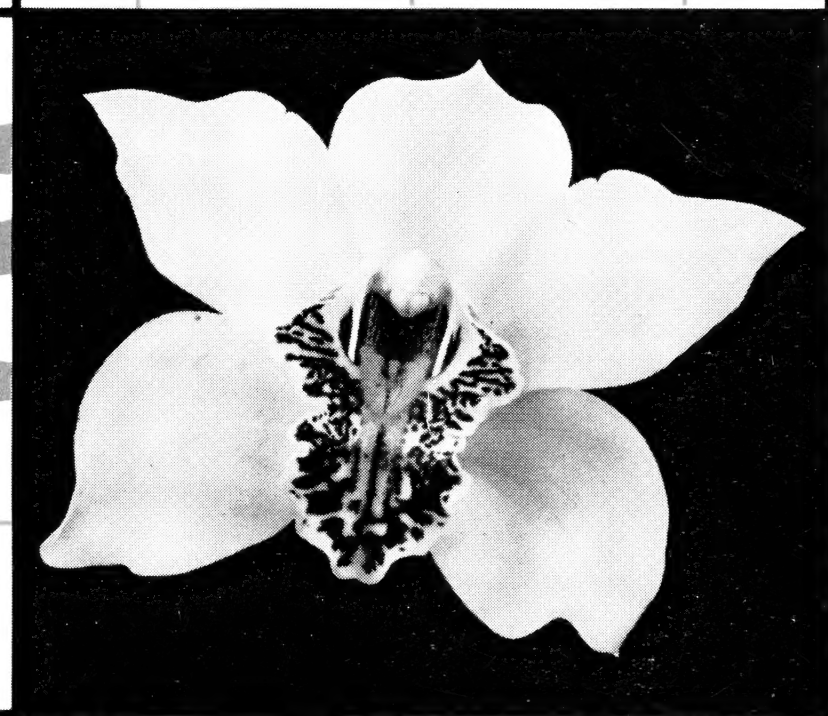
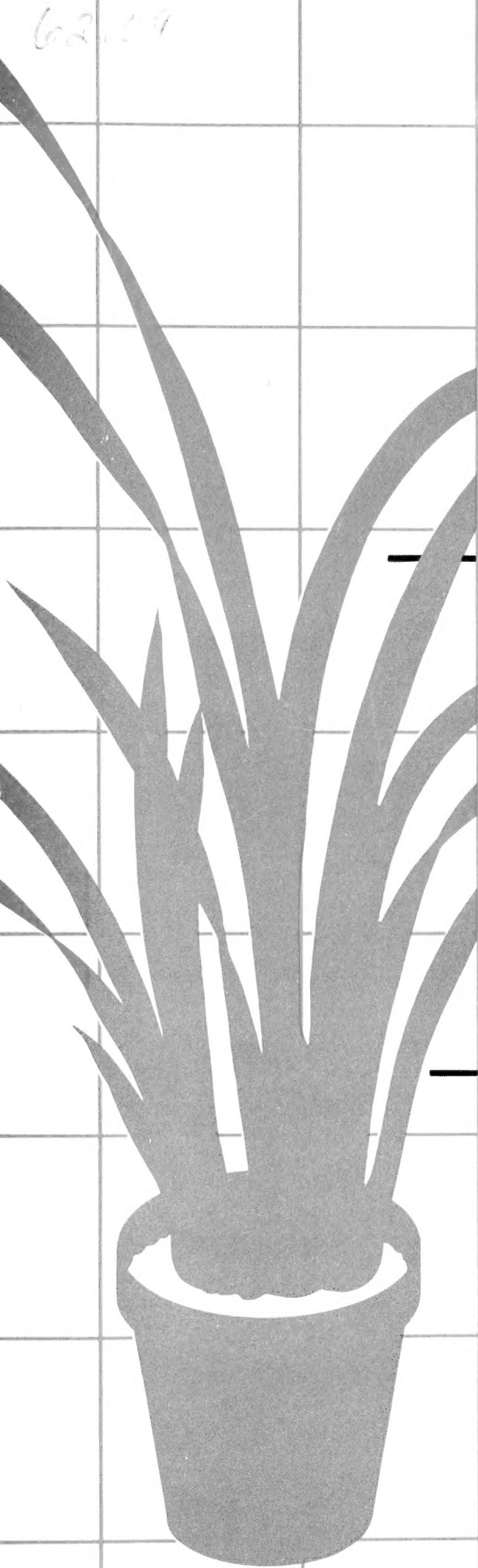


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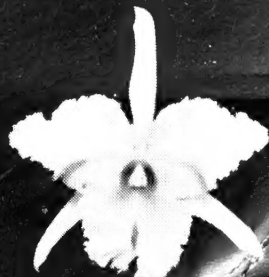
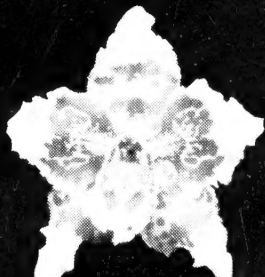
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orchids



your
orchid
guide

from the orchid house



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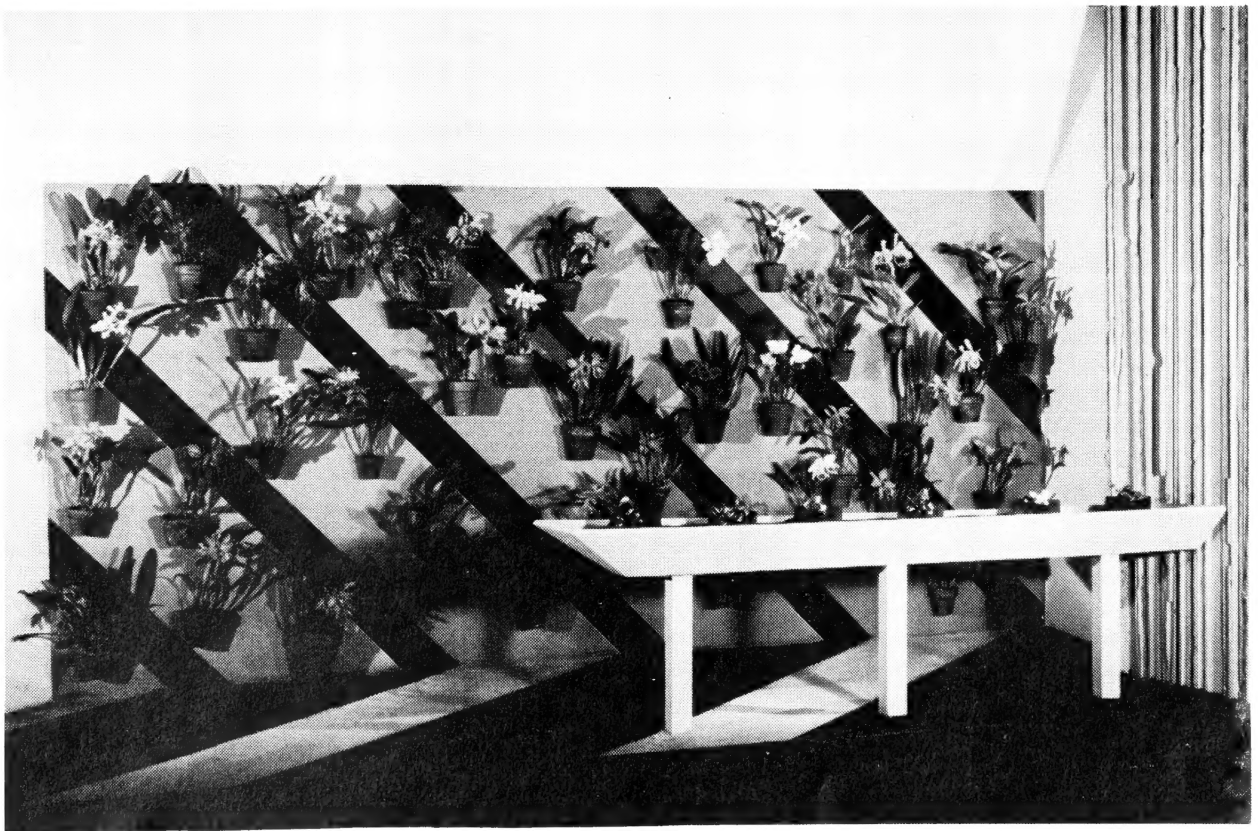
The ORCHID HOUSE

Temple City, Calif

Cattleya

List

FROM "FLANDRIA" IN BELGIUM



The Orchid House Exhibit

LOS ANGELES COUNTY FAIR
IN POMONA, CALIFORNIA

Cattleya List

The Orchid House takes pleasure in presenting the following list of fine Cattleya hybrids. They are in five-inch pots and will flower this year. These hybrids are from Flandria in Belgium and we have used their descriptions of the flowers.

Prices in 5-inch pots — \$8.50 each

Name	Flowering Period
Bc. Loosdrecht (Bc Liesbeth Hacke, dark var. x C. Woltho)	April-May
A large, strong Brasso, flowering heavily. Fine dark colours.	
Bc. Rita (C. Mossiae x Bc. Sindoro)	April-May
A very good Brassocattleya, the influence of Bc. Sindoro being dominant.	
Bc. Trisin (Bc. Sindoro x C. Trianae)	February-March
Strong large flowers mostly soft rose. Large well-shaped and frilled lip.	
C. Harea (C. Nutley x C. Dowiana var. aurea)	June-July
The seed-parent, C. Nutley is strongly dominant. A very prolific hybrid, flowering when few cattleyas are available. Mostly very dark flowers of strong substance.	
C. Horace (C. Woltersiana v. Th. Pauwels x Trianae v. Rex)	Nov.-Feb.
Some of the best-shaped flowers with very broad sepals, and a large rounded lip. Light colour.	
Lc. Bell (C. Labiata v. Prima x Lc. Van Oost, darkest var.)	Oct.-Jan.
One of our new Labiata-crosses, the flowering period of which appears to be controllable. Very prolific, large flowered with a marked influence from the pollen parent.	
Lc. Harital (C. Nutley x Lc. Italaurea)	Aug.-Oct.
Pink and copper with a very dark lip.	
Lc. Mascotte (Lc. St. George v. Mascotte x C. Nutley)	Aug.-Jan.
A new hybrid which flowers profusely from mid-summer to Xmas.	
Lc. Sabena (Lc. Van Eyck x Lc. Nicolette v. purpurata)	Oct.-Dec.
A rich flowering well-coloured hybrid. Some are of really fine shape.	

Cattleya List (CONTINUED)

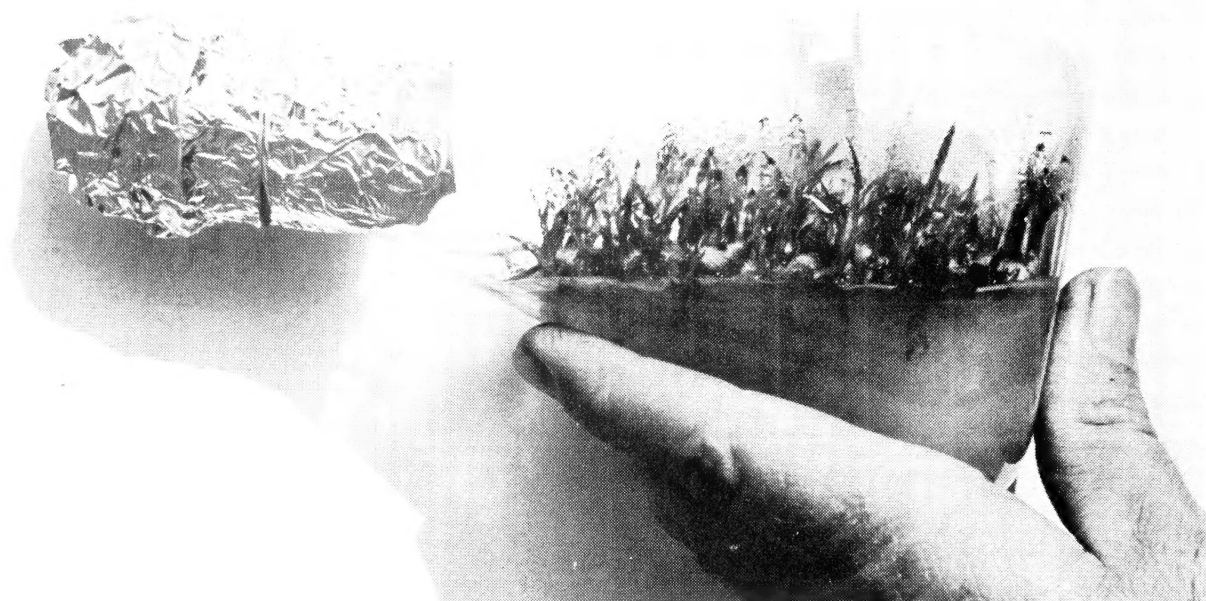
Name	Flowering Period
C. Joan Mc. Hutchison (C. Ambassador var. perfection x C. Labiata var. prima)	Nov.-Febr.
Very prolific, large flowers of excellent shape and heavy texture.	
C. Menco (C. Mendelii AAA x C. Falco, very dark var.) . . .	Late Spring
Blush to rose.	
C. Summer (C. Nutley x C. Falco)	July-Aug.
A good summer-flowering hybrid.	
C. Thoraw (C. Woltho x C. Falco)	Nov.-Feb.
A new hybrid which turned out to be extremely prolific; flowering from November to end of February.	
Lc. Alice Concioli (Lc. Ideal x Lc. Pompei)	Oct.-Dec.
This new hybrid is very promising. Flowers are dark, large, with heavy texture and fine shape.	
Lc. Ellen Foulds (Lc. Britannia x Lc. Vallandina)	Nov.-Jan.
A very useful Winter-flowering hybrid for cutflower production.	
Lc. Liberation Bruges (Lc. St. George x Lc. Netta)	July-Nov.
Flowering profusely and giving richly coloured flowers with dark veined lip.	
Lc. Panair (Lc. Britannia x C. Ambassador)	Jan.-March
Mostly dark flowers of very good shape. Strong, heavy texture.	

CATTLEYA FLASKS

Flasks ready for 1954 delivery

1. C. LABIATA x BLC. DANTE Superba—fine lip, controllable.
2. LC. BALKIS Enchantress x C. TITYUS W'birt—controllable.
3. BLC. MENDARNO x POTINARA MEDIA AM, RHS—1946.
4. LC. OENONE Nymph (white, large solid colored lip) x C. BRUSSELS alba—Br. Aw. SCOS.

Price: 4 flasks, \$100.00



Typical Flask of Doris Aurea x Alexanderi, Westonbirt FCC, RHS

CYMBIDIUM FLASKS — 1954

Following 500 c. c. Flasks offered for 1954 delivery — roughly 150 to 300 plants and protocorms to the flask.

1. ALEXANDERI W'birt. FCC,RHS x PEARL Mastiff — fine green — Jade
Expect large Alexanderi type — white and green shades
2. DORIS AUREA Petite Noir x ALEXANDERI W'birt. FCC,RHS — Glendora
Expect well proportioned Alexanderi type — red shades
3. ALEXANDERI W'birt. FCC,RHS x ROSANNA Imperial — Balkis
Expect huge whites — free flowering — vigorous
4. CONSTANCE FLORY floribunda x ALEXANDERI W'Birt. FCC,RHS
Expect large rose and pink flowers — free blooming

PRICE: \$75.00 per flask net

Flasks ready for 1955 delivery:

1. FLAMINGO Nobilior FCC,RHS x ALEXANDERI W'birt. FCC,RHS — Flamenco
2. FLAMINGO Nobilior FCC,RHS x PAUWELSII C. de H. FCC,RHS — Rhoda
3. PEARL Mastiff (green and red lip) x PAUWELSII C. de H. FCC,RHS — Marmie Kingsford
4. MAYFAIR (large dark red flower) x ALEXANDERI W'birt. FCC,RHS
5. Grandiflorum (green specie) x ALEXANDERI W'birt. FCC,RHS — Pearl
6. Grandiflorum (green specie) x PAUWELSII C. de H. — Erica Sander

PRICE: \$75.00 per flask net

THE ORCHID HOUSE

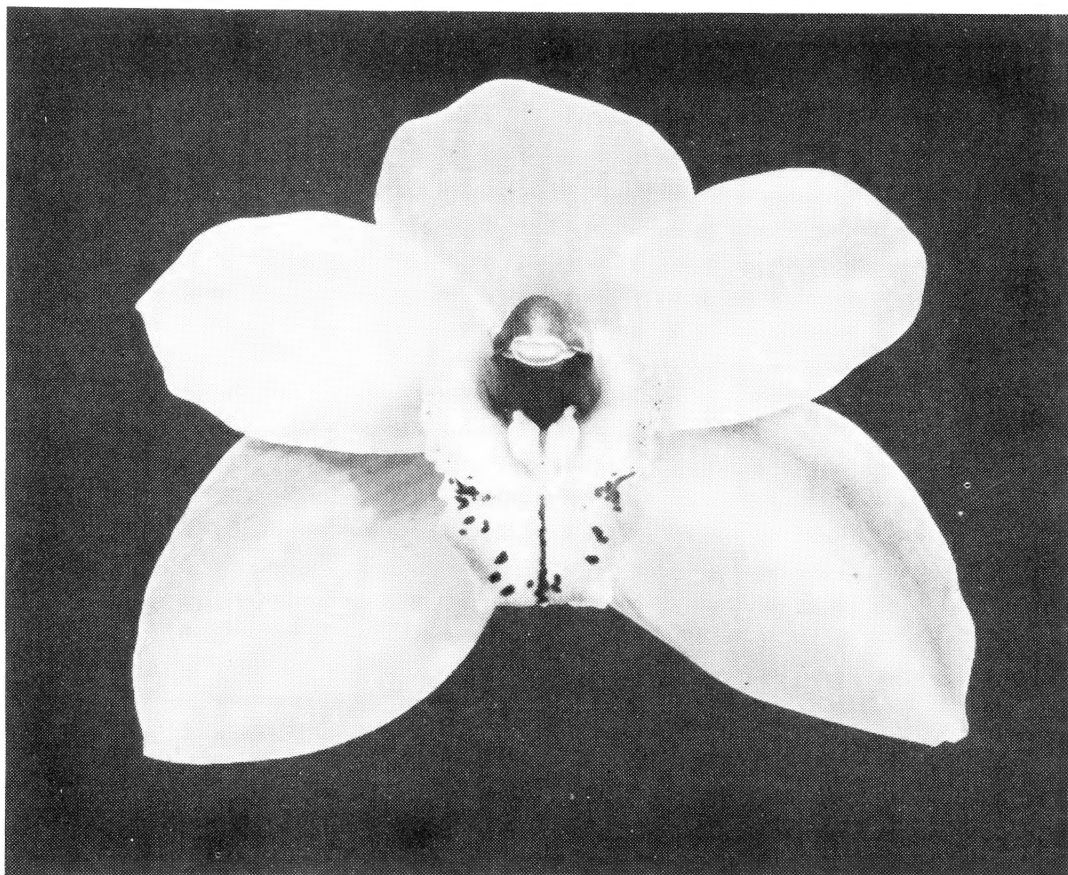
9433 EAST BROADWAY

TEMPLE CITY, CALIFORNIA

CUMBERLAND • 3-3968

ORCHIDS

*Cultural Guide for the
Successful Growing of Cymbidiums*



T H E O R C H I D H O U S E

Norris H. Powell

9433 EAST BROADWAY

TEMPLE CITY, CALIFORNIA

Phone CUMberland 3-3968

Foreword

*The Orchid House is Pleased to present
this Cymbidium Cultural Guide.*

*The intent of this booklet is to help you
get more and better flowers by assisting
you in the proper culture of the cym-
bidium plant itself.*

*Generally speaking, cymbidium orchids
grown under the conditions as set forth
in this booklet, when given reasonable
attention and care, will give you success
and satisfaction.*

COVER:

Cymbidium Swallow 'Ultima Thule' Bronze Medal, Cymbidium Society — 1953

ORCHID
GUIDE

50c

CYMBIDIUMS

CULTURE

TO BEGIN, we will say that you have just acquired a cymbidium plant and immediately you have a problem. What shall you do with it? What about repotting it? First, you should see its root system and begin to grow it in your own compost.

REPOTTING

Depending upon how and when it is done, this procedure can result in little or no damage to the plant's growth and its florescence.

If repotting must be done because the plant is obviously sick or grossly underpotted, or the compost is hopeless or exhausted, it may be done with the least harm by hosing the old compost out and loosening the plant altogether and repotting in a manner described later.

WHEN TO REPOT — In the summer months or the warm months of spring and autumn it will be found that most cymbidiums, irrespective of their stage of growth, are not at rest, whether or not the latest bulb has just been made up, whether a new lead has appeared, or whether a flower spike is just showing. If repotting must be done in the warm months, do it when the bulb is fully completed, as by this time the root system is fully developed and has fed the bulb to adult stage. It will still be active in the warm months, supplying reserve energy, or preparing the bulb for a late autumn shoot, or developing the early flower spike, but at least its major job will have been done.

It is best to delay repotting to the late winter months, say, *no earlier* than the second week in February with an average established hybrid. During the winter months the plant is either dormant or relatively so, and by selecting middle February you are just anticipating the new growth that surges in all plant life before spring comes, and what damage may be done will be more or less quickly repaired and the plant practically will move straight ahead. Even if the plant had made a late summer or even autumn growth, that growth will have stood practically still during the cold winter and the plant be relatively dormant. So, in the late winter, do not hesitate to repot, even if an autumn new growth is well developed and well above the compost, this being vastly different from a developing new lead in the warm months when growth is active.

By the second week in February, the plant may have a flower spike and even new growths as well as the flower spike. Repot it if it is necessary. The repotting will not damage the flower spike nor the plant if carefully done at this time. The plant is still relatively or wholly dormant, the last stages of florescence being made on the reserves that the root system has stored in the bulbs. That is why, at the end of flowering, the root system often being dormant, the bulbs shrivel somewhat, as their reserves are drawn upon. The cycle of that bulb is finished; new growth, maturation and florescence have been completed; and then, after flowering, come rest and recovery of energy to start a new growth or, if the new growth has started already, to urge it on more quickly.

A bulb that is going to flower nearly always shows the flower shoot first and the new lead later, and nearly always the new lead is later in appearing

than it would be if the bulb were not in spike, the plant preferring to throw its energy into the development of the spike rather than the new lead.

As a general statement, defer repotting until late winter, *as a general working rule*, and repot at this time without hesitation, whether the plant be in spike or developing new leads, or both, if the plant should need it. If the plant is sick, the root system rotted, the compost obviously foul or exhausted, or the plant grossly underpotted, repot immediately at any time



NERIED, (Charmian x Pearl)
An early blooming hybrid

of the year, as the check to the plant will probably be less than leaving it under its existing condition; but repot very carefully.

No cymbidium should be grown in a pot larger than will comfortably accommodate any more than three years' growth (preferably two years), which means that a cymbidium should be repotted each three, or preferably two, years. By this time the compost is exhausted, and the constant watering in summer together with the natural exhaustion by the feeding roots, will have leached out a great deal of nutriment, or the compost will have degenerated so that it lacks drainage and is in danger of becoming sour. Small plants and propagations from back-bulbs should be repotted each year. Now, before the actual repotting, other factors must be considered, and the first, after selecting a suitable pot, is drainage.

DRAINAGE

When one asks a grower why he enlarges the drainage hole in the bottom of the pot, almost invariably he will answer, "For better drainage." He really does it for two reasons: first, to minimize the risk of a small hole blocking, and the second and main reason is for aeration, both often being negated by standing the pot directly on the ground. For drainage pure and simple, if the hole is clear, the very smallest hole is quite adequate, the drainage really occurring in and depending upon the compost and crocking. The hole is merely the final exit for the drainage that occurs in the compost. An exit hole one-fourth of an inch in diameter would pass gallons of water in a few minutes, if clear.

Therefore the size of the hole does not affect drainage. Drainage occurs in the compost. Not even perfect crocking or the largest hole will influence it. The hole can only pass what passes through the compost. Drainage in practice depends upon the physical texture of the compost.

HOW TO REPOT

The pot should be selected for size and prepared, and the compost ready mixed and dry. Take the plant to be repotted, lay it on its side and hose out the old compost with a single stream strong enough to do this thoroughly but without undue force. In cymbidiums it will be found that most of the roots will leave the pot, especially if the pot is well wetted before the hosing is started.

Cut away all dead and broken roots. Cut away those bulbs older than three years. It will be exceptional if any bulbs older than three years have any live roots. They are of use as back-bulbs but of no use on the plant. Bulbs older than three years will never flower, never shoot unless the rhizome is broken, and are a drain on the plant's constitution if left on the plant. Make them work as back-bulbs and grow new plants, and keep the original plant juvenile. *Divide the plant with these ideas in mind if division is necessary.*

Arrange the roots over the crock, and so the plant is a reasonable distance below the rim of the pot, holding it in this position with one hand, the oldest bulbs being nearest to the edge of the pot. Fill in the dry compost around the sides and then shake or bump the pot until the compost filters in and around the roots. Add more compost, still holding the plant at the desired level and position until the plant is firm. Add more compost to just cover the base of the plant, and bump and shake the pot to settle it. Never ram the compost and never pull the plant. Clean and spray the leaves with approved insecticide. Do not peel the protective covering off the back-bulbs.

AFTER-TREATMENT

No matter how carefully you have repotted the plant, it has suffered some damage, greater or less, according to your experience and skill. Stand the plant in a cool, moist place. The compost being dry and the pot aerated, abrasions and fractures of the roots will heal over. It is a mistake to water immediately on repotting because these abrasions and fractures rot. If you could knock the plant out after three or four weeks (if immediate watering after repotting is your custom), you would be surprised at the damage to

the root system, many being dead or dying, just because of this fanatical hurry to water. Shrivelling after repotting is often due to this immediate watering, as well as by bad handling in repotting or failing to select the proper time to repot. Often it is made worse because the shrivelling often induces the grower to water even more in an attempt to correct it. Shrivelling is, in actual fact, due to the loss of water through the leaves in excess of water than can be taken in by a dead or dying root system. Shrivelling nearly always means dead roots rather than dryness, and if you water to



CYGNUS, 'Gold var.'
(Conningsbyanum x Alexanderi, 'Westonbirt,' F.C.C., R.H.S.)

correct it without first insuring that the root system of an orchid is not only dry but also sound, you surely make it worse.

After the fourth or fifth day, water the plant thoroughly, and if the compost settles down, add a little more. Let the pot dry out and remain dry for two or three days, then water again and let it dry out once more for two or three days. After this you can safely water to keep the compost moist, never continuously wet. Do not be afraid to let the plant dry out for a time, short of shrivelling from dryness, until active new growth is observed. The reason for this advice is as follows: The new growth is born, and supported in its early life, from a bulb, and it is a mistake to continually water an established plant with roots in an endeavor to start it off in new growth or to re-start an autumn new growth that has stood still during the depths of winter. The roots will not be growing until or just before the new growth starts or, if started in autumn, until it becomes active. They may have been damaged by repotting. They cannot cope with excess water, and if the compost is kept continually wet you will only succeed in rotting them.

CYMBIDIUM POTTING MIX AND FEEDING

In growing Cymbidiums, as in growing any plant, an item of major importance is the compost or mixture in which the plants are grown. The number of mixtures used are as different as the people who compile them. Other things being equal (the amount of water, aeration, light, etc.), all these different mixes will give good results.

After many years of trial and error, we found that in the mixes we had used, the component parts were not standard and would vary greatly from year to year, giving varied results. We make no apologies for feeding; for we feel that those persons who say they do not feed are not being exactly right in making the statement. If they were not feeding the plant, they would plant in a mix of rock or other inert materials. To say that the orchid plants do not require feeding is erroneous, for there is not any place in nature where a plant or animal does not require nutrient, or is starved to make it produce.

We have always felt that it seemed strange that nutrients were added to the agar to feed seedlings as the seed germinated, but upon taking the plants from the flask, they would no longer be fed.

To determine the amount of feed to use and also to learn how often to feed, and what mix to use to hold the plant while it was growing and being fed, and in an effort to get a mix that would be the same from year to year that would contain the proper balance of moisture and optimum amount of fertilizer throughout the year and that would also remain stable for a suitable period of time, we called in a consultant on soils to design a mix.

In designing such a compost, Mr. Matkin, our consultant, pointed out that all plants had the same basic requirements from a soil mix: 1. *Water*; 2. *Oxygen (air)*; 3. *Mineral nutrient*; 4. *Physical support*.

Thus the ideal growing medium must consist of two fundamental parts:

1. *The physical portion, which insures adequate moisture retention, plus excellent aeration. These are of first importance in obtaining root development.*
2. *The chemical portion which supplies the required elements for plant growth and development.*

These minerals and water are the only materials taken up by the plant roots. Organic materials affect only the physical structure of the media until such time as they have decomposed to provide soluble minerals. They are then no longer organic.

There are also some other considerations in designing a superlative Cymbidium mix:

1. *Freedom from disease.*
2. *Freedom from weeds.*
3. *Freedom from insects and slug and snail eggs.*
4. *Light in weight (low density).*
5. *Uniformity and reliability chemically and physically.*
6. *Fertility high without being excessive.*
7. *Stability — material that does not readily decompose with resultant poor aeration or excessive mineral nutrient release.*
8. *Ease of potting and repotting.*
9. *Material that can be watered heavily without fear of reducing aeration.*
10. *Readily available at economic rates.*

This last consideration was one of major importance, and to meet all these requirements, it was decided to use the following basic physical ingredients:

- 1/3 peat moss—for retention of moisture.
- 1/3 shavings—to provide aeration and to take the place of the peat as the peat decomposes.
- 1/3 fine sand—to insure good drainage and aeration and to furnish physical support.

This mixture should be fumigated before use to eliminate weeds, worms, snails, slugs, bacteria and fungi.

These basic ingredients were purposely selected to supply little or no nutrient. The nutrient requirements could be met by adding certain fertilizers to supply nutrients in proper proportion to provide a fertile non-saline growing mix.

The fertilizers that were added are:

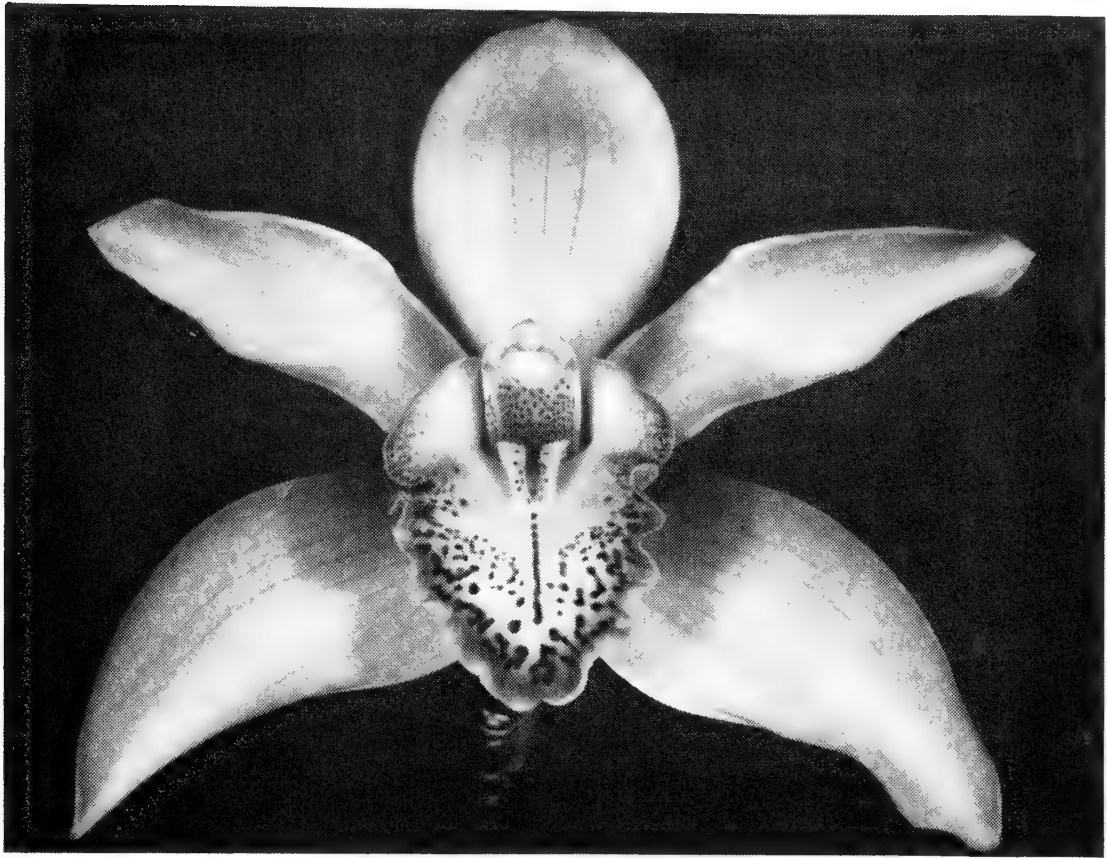
1. **Potassium Nitrate:** Both potassium and nitrogen are essential nutrients for plant growth. This material provides a maximum of both in a minimum of bulk. The nitrogen here is immediately available (about 14% N, 46% K₂O).
2. **Treble Superphosphate:** This material is actually mono-calcium phosphate made by treating phosphate rock to make the phosphorus more available to plant growth. It is only sparingly soluble and therefore long lasting.
3. **Dolomite Lime:** This material supplies both calcium and magnesium, and in addition it counteracts the acidity of the physical ingredients which are too acid for optimum growth.

Since there is not an unlimited reservoir of nutrients in the mix, it is necessary to provide the required elements from time to time as the plants are growing. The initial concentrations are optimum but nitrogen will be of primary concern because it is most readily leached and is used in two ways in the mix:

1. Plant uptake.
2. Microorganism uptake as they slowly decompose the organic materials in the mix.

Liquid feeding is perhaps the safest and most accurate method of fertilizing. Nitrogen can be supplied as urea (46%N), phosphate as mono-ammonium phosphate (12% N, 61% P₂O₅), and potassium nitrate (14% N, 46% K₂O). These materials can all be mixed with one another in solution. They provide a maximum of nutrient with a minimum of salinity.

There are several fertilizers on the market today that answer these requirements, Instant Vigoro, RX-15, and Folium to name a few. We use and recommend a formula recommended by Mr. Matkin as being best for our potting mixture—a product known as Formula 312. In areas where water contains an excessive amount of sodium salts, the use of agricultural gypsum is suggested (usually one tablespoon to a six inch pot every three months is sufficient). Another corrective procedure is to irrigate with lime sulfur solution (diluted 1:200) every three months.



ISPAHAN
(Rosanna, F.C.C., R.H.S. x Lowianum)

In potting with this mix, we used only shallow or fern pots. The opening in the bottom was enlarged to about 1" in diameter and only one piece of crock was used; thereby making a saving in the time consumed in crocking; a practice usually resorted to in order to gain sufficient aeration. It was found that for best results it was better to overpot and to leave the top planting surface about 1" below the top of the pot. This is occasioned because the roots tend to lift the plant up to where the surface is even with the top of the pot rim, making water and feeding more difficult.

A program of repotting into this kind of mix was started with the beginning of the New Year in 1954, and the results in eleven months have been very gratifying. The soil analyst made periodical checks and tests, both upon the soil after being in use, and the foliage grown, to determine if the plant was getting the right amounts of water and fertilizer. It is to Mr. Matkin's credit that the mix and feeding program was correct from the inception of the program; for the nutrient has not been changed, nor has the mix being changed. The tests show the mix still has a pH 6.1, the fertilizer ample, and the growth has been far better than expected. Also, the flower spikes have been far in excess of any expectation. At present many major Cymbidium growers in the southland use the services of "Soil and Plant Laboratory" (Mr. Matkin's firm). The results are further proof of the wisdom of adopting a scientifically directed feeding program.

CULTURE

WHERE TO GROW IT — Its position and treatment for the first two weeks after repotting have already been dealt with. What follows? By now it is generally accepted that it must be grown in a situation that gives good sunlight; that is, if you desire it to flower and not simply have it as a foliage plant. The plant needs sunlight, not just light, to induce adequate maturation of the new lead into the new bulb slowly and continuously as it grows. It is a question of photo-synthesis, chlorophyl formation and chlorophyl activity, and the bio-chemistry of the plant, light of the intensity of open sunlight for at least some part of the day being necessary to insure that these bio-chemical changes occur in adequate quantity and with adequate speed to produce maturation of the bulb by the time seasonal floescence is due to occur. Remember, a bougainvillea will make luscious, leafy growth in shade, but will not flower. To flower, it needs stronger light, sunlight and an adequate number of sun hours. It is so with your cymbidiums. The old idea of growing the plant in shade or relative shade and then, when the bulb is making up, suddenly withholding water to starve it, or "mature" it, is quite wrong. It is the maturity of the last-made bulbs that largely influences floescence in the new bulb, and that floescence is determined early in the life of the new lead, and its completed development is carried on by the new roots from the old bulbs replacing the energy withdrawn and later on by new roots from the new lead itself.

That is why a cymbidium must be established and matured before it will flower. You may take a badly grown plant and grow it wonderfully well under healthy, hardy conditions and produce a mature bulb for the first year, but it may not flower. In the second year it will because there is enough maturity and energy stored in the first bulb you have made to start floescence in the new lead in the second year of your culture. So realize these things: ((1) whether a new lead will flower depends to a great extent on the maturity of at least the bulb immediately behind it; (2) whether a lead will flower is determined early in its growth; (3) it may be going to flower and you produce miscarriage of the flower by bad treatment; (4) flowering is comparable to pregnancy—an attempt to increase its species—and the idea of starving any living thing when pregnant to make it produce its progeny is wrong; (5) a lead from a back-bulb will occasionally flower if the plant is well grown under conditions producing good maturity, especially if the back-bulb from which it started is vigorous and young, from a well-grown and well-matured plant.

If your plant has been shade grown, start it off with sun in the winter or early spring and get it used to it. In hot, sunny weather, especially with hot, drying winds, see to it that the compost is not bone-dry. *Think — and use discretion.*

If possible, perhaps at least for your better plants, raise them 18 inches off the ground on wood frames, standing the plants on slats so that the drainage hole is between the slats, allowing ventilation. If the plants are placed on the ground, the watering softens the ground and the weight of the pot forces a plug of earth up into the drainage hole. Thorough ventilation of the compost, to keep the roots hardy, is prevented; worms help to block the hole and drainage is impaired. Slugs and snails find ready entry if the pot is directly on the ground.

HOW TO GROW IT — The culture for cymbidiums is broadly the same as for every other orchid. The physiological cycle is new growth, maturation during growth and after growth, florescence and finally rest. The first stage is new growth. As soon as new growth appears, or even before, root activity has started in the roots from those bulbs having live roots. The tips grow, lateral roots form from the old roots, and new roots may grow from the last made bulb. At this time the new lead has no roots of its own but the plant is in active growth. The new lead is drawing on the leaved back-bulbs, and this energy withdrawn is being replaced by the growing roots and photosynthesizing leaves of these bulbs. This energy requires nutrients. Nutrients can only be assimilated in solution, and the solvent is water. So, as soon as new growth appears, begin to water, gradually at first, and as the root action increases, proportionately increase the watering until finally the plant is kept almost continuously damp but never continuously wet. Continue this watering until the bulb is fully made up and after, while the warm weather lasts, to store the food into the bulb and develop the spike if it is going to flower.

Often it will make autumn new growth if the weather is warm, so get this growth advanced, for it will stand still, or relatively still, in the inter and start to re-grow in the spring. While the weather is warm, even in November, the roots are active and some growth occurring. In the winter, avoid the compost being continuously wet, as you will rot out the roots, and in the spring the plant starts far, far behind schedule. Do not water at all, or only if you notice the bulbs shrivelling and know that the roots are sound. Be sure of this latter, because shrivelling more often occurs from the loss of a root system than from dryness. The flower spike, if the bulb is flowering, will not require that the plant be excessively watered during winter; in fact, this would harm it. The roots may rot and the bulbs (being quite exhausted after the spike is finished) shrivel badly because the exhausted food reserves cannot be replaced by the root system.

THE NEXT STAGE IS FLORESCENCE — Every adult established plant that has been well grown, under conditions that insure adequate maturation for at least two years, can and should flower. If it doesn't, then we must seek the reason why.

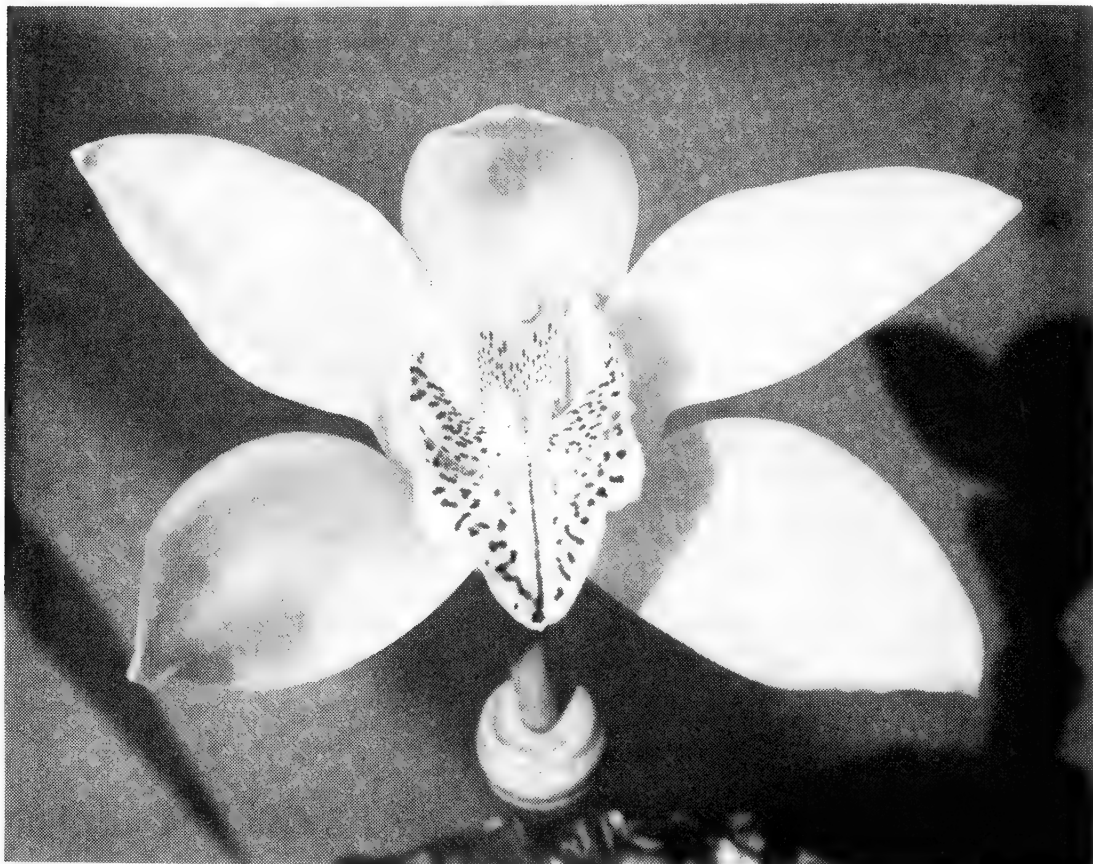
If, first we consider the factors which contribute to florescence, it may be possible to find the source of non-flowering.

- (1) The bulb which is to produce the flower must be reasonably mature and healthy. A well grown plant can readily produce such a bulb in one growing season — spring through summer.
- (2) An adequate light intensity is necessary in order that the flowering bulb can manufacture and store the necessary food resources required for reproduction.
- (3) A sufficient amount of coolness in the period of initiation (late summer) and (early fall) seems to be essential.

CAUSES OF NON-FLORESCENCE — Not all crosses flower with equal ease. Some are so difficult to flower that they should not be grown by the amateur. In the following discussion it is assumed that the plant in question has a known ability to flower.

Lack of flower spike initiation may result from:

- (1) Poor cultural practices which failed to produce a healthy new bulb in the normal growing period. Root damage from disease, salinity, or poor aeration could be factors. Lack of sufficient fertilizer or moisture could be factors. Proper control has been outlined.
- (2) Low light intensity or very short days, due to morning and evening heavy shade, could result in insufficient storage of foods. It is frequently the practice of orchid growers to supply enough light to keep the plants slightly on the yellow side. In terms of light



JUNGFRAU, 'Snow Queen'
Silver Award Cym. Soc. '51; F.C.C., A.O.S. '52; A.M., R.H.S. '35

intensity, a minimum of 2000 ft. candles should be maintained with the maximum in the vicinity of 4000 ft. candles.

- (3) Too high a night temperature in the period of initiation. From July on, the plants should be exposed to as much cool night temperatures as possible. Although the "critical" temperature is not known, and is probably not the same for all crosses, it does seem that temperatures below 50 degrees F. are able to affect flowering. The minimum number of hours of low temperature is probably another requirement, being variable with the various crosses. Practical control of this phase usually is confined to providing maximum ventilation plus some evening and night syringing. During this important period, plants should not be kept in *heated* greenhouses or indoors.

Vegetative growth is independent of the reproductive stage.

Both may occur simultaneously and frequently do when conditions are favorable. When moisture, light, and temperature are favorable for vegetative growth, it will take place. Be not concerned about vegetative growth at odd times; be concerned if it does *not* occur.

PRUNING

From a variable time, the new lead from a cymbidium has no roots of its own but depends entirely upon the bulbs behind it. If the root system of the plant is good, there is no shrivelling of these bulbs because, when new growth starts, root action recommences concurrently, or just before. This means the energy is resupplied as fast as it is withdrawn, the process being continuous. That is why your new lead, from an established plant with roots, is better than your new lead from a back-bulb with no roots. If, however, the plant has a poor or no root system, shrivelling soon commences and the new lead, feeling its food supply giving out and its existence in danger, makes its own system of roots earlier than it otherwise would.

If, in addition to having no roots, the bulbs are fully leaved (sometimes the case when divisions of plants are bought), shrivelling may be very bad because the leaves transpire water vapor through the stomata. In this case, to conserve the water content of the bulb, it may be advisable to prune the leaves to prevent this.

Well, then, when the new lead is making its own root system, less and less sustenance is being drawn from the bulbs until finally it stands upon its own feet entirely. When this occurs, since the new lead and the old bulbs are continuously connected by the rhizome, the old bulbs with roots use their food themselves to restore their energy, and also the new lead may contribute and repay what it borrowed in its infant stages. This energy is restored to insure the plant against some possible future damage or future starvation, when it can carry on in the case of the latter or start new life in the case of the former.

You will have noted that it is rare to find live active roots on bulbs older than three years. Yet these bulbs are plump and alive. Their life and condition are maintained at the expense of the younger bulbs which have roots. In other words, bulbs more than three years old are a drain on the plant and may hold back its vigorous growth in quantity, quality and its florescence. These bulbs will never flower, and their only purpose is to safeguard the plant against prolonged starvation, and this should never occur in cultivation. In any case, the bulbs younger than three years will do this for a considerable time.

So cut old bulbs away; prune the plant and keep it juvenile. You prune your shrubs, roses, etc., to obtain vigorous new growth and more and better flowers. Do the same with your cymbidiums. Do not allow your young bulbs to support the older bulbs until they are so hard pressed that they have only a bare existence, progressively poorer in new growth and in flower.

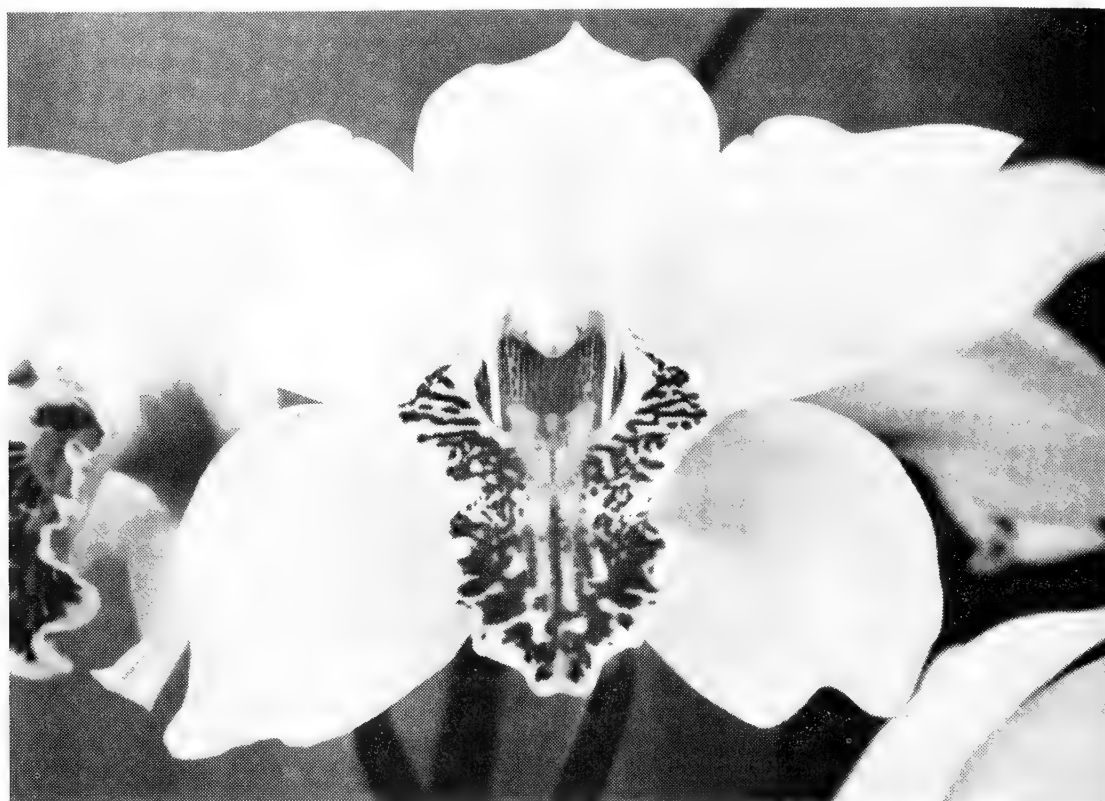
VEGETATIVE PROPAGATION

In actual fact, these older bulbs have another function besides insurance against starvation. If the plant suffers actual damage, those bulbs behind the site of damage can use their stored reserves of energy to start new vegetative

growth from dormant vegetative "eyes." This fact can be utilized in vegetative propagation from old back-bulbs. When they are cut from the plant, individually or in groups, new plants can be started from them. The optimum time to cut them and start them off is repotting time — middle of February. If the plant is not to be repotted, they can be "pulled" to break the rhizome, or the rhizome completely cut through and the bulbs left in the pot. In this case the conditions of starting new growth are liable to be too severe to obtain the best results.

It is better to completely sever them from the main plant at repotting time, which anticipates warm spring weather, and repot them separately as single bulbs.

The method of starting the old bulbs is easy, especially if the old bulbs are not too senile, and one to four new growths from each back-bulb is pos-



ROSANNA 'Imperial'
Bronze Award S.C.O.S., 1954

sible. They need only moisture and warmth and will even start in garden soil, provided these requirements are met continuously. A safe and quicker method, giving a greater percentage of good results, with multiple or stronger new growth, is as follows: (1) Do not peel off the old protective leaf bases covering the bulb. They cover and protect the vegetative eyes from excessive contact with water, pests and light. They are designed by nature to protect, so leave them. (2) Make up a tray, well drained at the bottom, and fill it with three or four inches of live moss or a mixture of two parts tan bark, two parts chopped, clean fibre and two parts leaf mould. It should not be packed tightly. (3) Insert each bulb, vertically, to one-third of its depth into this, base downwards. Place in the glass-house, preferably but not essentially, and keep warm and moist. (4) Start your back-bulbs early in the season so that you give them the whole growing season of summer and autumn to develop strong leads which will make up into small bulbs early

in the winter. If your shoot begins late in summer or autumn, it will follow the seasons and be dormant in winter and will not make up into a bulb but will re-grow in spring, bulb poorly and break into the second season's growth before it gets in step, and is behind, compared with a lead from a back-bulb made early in spring, for perhaps two or even three years. (5) When the new lead shows its first roots, take the back-bulb out and repot it as previously described. Do not overpot it and do not use rich compost to make it grow quickly. Do not overwater it. If you lose the new roots on the new lead, the lead is checked considerably, may even die, and you may be back to starting off with a back-bulb again. (6) Grow under shelter, preferably in a glass-house, for the first month. Do not push it straight into direct sun immediately on repotting. A few days' neglect or extreme weather may harm it. Give it good light, in a sheltered position and some care. One or two months after repotting, move it into a position where it gets morning sun, and gradually prepare it to take its place with the adult plants in later summer or autumn.

INTENSIVE VEGETATIVE PROPAGATING

This is used where the back-bulb has shot from only one dormant eye and the plant is highly regarded, and you want as many growths as possible from the one back-bulb. The method should only be used when the original back-bulb used is vigorous, fairly young, and has started its growth in spring or early summer.

The method is as follows: when the first growth has rooted well in its pot, usually two months or so after repotting and before the roots are clinging to the sides of the pot, carefully hose out the compost. Very carefully separate the new lead from the back-bulb and repot it in compost that is dry. Leave it for two or three days and keep well sheltered. On the third day soak the pot thoroughly and let it dry out. Then soak it again and shelter the plant for a few weeks. The back-bulb is started again in the usual way from a second eye. This process may be done until the bulb is exhausted.

PESTS

Cymbidiums are not troubled greatly with pests. Various scales and thrips can attack them, especially young plants grown under shelter, but can be controlled by the usual sprays. Earthworms, slugs and snails are a trouble, especially if the plants are grown directly on the ground. They can be controlled to some extent by raising the pots off the ground and by the usual remedies known to all gardeners.

EPIPHYTE ORCHIDS

Cattleyas — Odontoglossums — Vandas — Phalaenopsis

For orchid plants of an epiphyte nature, we have long used osmunda fibre. Because this product was not standard, there being a great variation from bale to bale, both in texture, color, weight and degree of freshness; it was also too costly, both in first cost and cost of potting the plant. Another factor, also entered into arriving at a decision to adopt another potting media. The consumer or customer sometimes had difficulty in potting or in getting a qualified man to do the potting and even when a good man is obtained his services are expensive. So again, in the epiphytes, as in terrestrial orchids, the quest was for a mix that was:

1. *Readily obtainable.*
2. *Inexpensive.*
3. *Easy to use.*
4. *Assured aeration.*
5. *Stable (would last up to two years).*
6. *Free from weed seed and insects.*
7. *Free from parasitic fungi and bacteria.*
8. *That would be a good medium for a feeding program.*
9. *That would encourage a strong root system and retain that system for a long period of time.*

Mr. Matkin, the consultant on soils, stated that he had been raising Cattleya and Phalaenopsis in shavings in his greenhouse at Orange, California for some time. Upon visiting his laboratory and greenhouse, we decided to begin planting all our epiphytes in a sawdust or shaving mix that had been *fortified* with nearly the same chemicals as used in our Cymbidium mix. The feeding program was altered somewhat, to allow for more nitrogen and that fertilizer mixture is now being offered by us for sale along with the epiphyte mix.

Potting time has been cut by $\frac{2}{3}$, root systems are better, the material is much lower in cost (about $\frac{1}{5}$ the cost of Osmunda), and much cleaner to use. The aeration is far better, the mix is more uniform, it lasts well, and it is easier to remove from the roots at time of repotting.

The material is stored in bunkers and is relatively free from weed seed, insects, parasitic fungi and bacteria. Because fertilizer is applied at regular intervals, growth is better and stronger, and more flowering breaks occur. Time consumed in feeding can be reduced by using an applicator. If an applicator is used, feeding time is only slightly longer than watering time. This mix is easily wet and is not difficult to dry out, since the wood shavings offer considerable surface for evaporation.

We are now satisfactorily growing all our Epiphytes, Cattleyas, Cypripediums, Miltonias, Odontoglossum crispum and allied genera, Dendrobiums, Vandas, and Phalaenopsis in this *fortified* shaving mix.

Notes on the Naming of Orchids and Glossary

Compiled by NORRIS AND BETTY POWELL

of

THE ORCHID HOUSE

9433 EAST BROADWAY — TEMPLE CITY, CALIFORNIA

As a rule botanical names have been given for some good reason, usually to point out some characteristic or outstanding feature of the plant and are simply a classical way of saying "moth-like," "spider orchid" or "butterfly orchid." These names are sometimes used colloquially and are often misleading because one person's idea of a butterfly may be akin to another person's idea of a spider. To persons with some acquaintance with Latin or Greek, the meaning is obvious, but since many lovers of orchids are not familiar with these languages the following interpretations are offered in the hope that the names will be more clearly understood and more easily used.

Quite often orchids are given commemorative or complimentary names, that is, names of persons who deserve our respect or admiration, the name is then converted to the classical by the addition of a latin ending, "ae," "ia," "a" or simply "i." When the specific name is derived from the discoverer or introducer, the ending is "ae" or "i." As in *Cymbidium Sanderi* and *Cattleya Skinneri*. The word *Cymbidium* is from the Greek meaning "boat-shaped" from the shape of the column and *Sanderi* is in honor of Mr. Sander, who introduced the plant. The *Genera Cattleya* is named in honor of William Cattley, Esq. of England, one of the earliest orchid amateur growers, with whom *Cattleya Labiata* produced its first English flowers, and *Skinneri* commemorates the untiring and excellent effort of Mr. George Ure Skinner of Guatemala, who sent many of the first orchids to England more than 100 years ago.

When a name is used or bestowed in compliment, the ending "us," "iana" and "ianum" is used as in *Hortus*, *Sanderiana* and *Dalhousieanum*. Whether the name shall end in "i" or "ii" is optional. The termination usually agrees with the gender of the generic name. This, however, is sometimes disregarded as some would prefer to say *Humboltius* and others *Humboltus*, either being correct. The same freedom pertains to the accentuation of the names ending in a single "i." That is to say, they may be pronounced either Hook'eri or Hooke'ri, since the ancients who used the classical had no such names there would be no classical rule.

Some orchids receive their names from the vernacular of their native land, *Vanda*, for example, but some have had Latin endings added as in the case of *Angraecum*.

To go back to our earlier reference about colloquial names for orchids, the objection is often raised, why cannot these plants and glorious flowers have "English or American names?" One view is that English names would be impractical, another is that they already have English names! Names akin to buttercup and snapdragon would be difficult. To attempt to apply or bestow such names would be a thankless task, very few would be willing to accept them, and in the presence of fuchsia, begonia and rhododendron, iris and chrysanthemum, crocus and narcissus, and a thousand others which are definitely as un-English as *Calanthe* and *Epidendrum*, it would be absurd, for it would be an attempt to supply a want that no one really feels. After all, the lily, rose and violet are not English names, but are Latin words with the ending altered. Quite often we find the orchid names being shortened in a like manner, and we say Cymbids, Oncids, and Dendrobes for *Cymbidiums*, *Oncidiums* and *Dendrobiums*.

It would seem an impossible task to use other than Latin for understanding between different countries. The vernacular of the exotic plants, if adopted as a whole, would be scarcely an improvement on the Latin, for instead of *Stanhopea*, we would use *Coatzonte Coxochitl* and instead of *Laelia Grandiflora* we would say *Chichilitic Tepetlavhxochitl*! These are two orchids described by Hernandez and are the first of the Mexican species to be figured.

GLOSSARY

ACINE'TA (Gr.) Literally "immovable," referring to the remarkable union of the base of the labellum to the column.

ACLAN'DIAE—In compliment to Lady Acland, by whom the *Cattleya* so named was introduced from Brazil.

ACUMINATE
ACUMINATUS-A-UM } Drawn out into a long and tapering point.

AER'IDES (Gr.) One of the earliest names given to epiphytic orchids, signifying "air-plant," and intended to express their seeming nourishment by the atmosphere alone.

ALEXAN'DRAE—In compliment to her Royal Highness the Princess Alexandra.

AMAB'ILIS-E—Lovable; lovely.

AMETHYSTOGLOSS'US-A-UM (Gr.) Having the lip amethyst-colored.

AN'CEPS—Two-edged.

ANGRAE'CUM—Rumphius, in his travels, over two centuries or more ago, found the Malayan name for an epiphytic orchid of any kind to be *angrec*. This word he Latinized.

ARACHNITES (Gr.) In the mythology of ancient Greece, Arachne was skillful above all other women in the art of embroidery with the needle. After her death she was transformed by Minerva into a spider, so that she might continue to exercise her ingenuity though in another way. The body of the creature is supposed to have some sort of resemblance borne to it in the flowers of the *Aerides Arachnites* and one or two species of *Ophrys*.

BARKE'RI }
BARKE'RIA } In compliment to Geo. Barker, Esq., a celebrated orchid grower.

In addition to the genus, seven or eight species and varieties of orchids have been named after Mr. Barker.

BENSO'NIAE—In compliment to Lt. Col. Benson, of Rangoon, whose indefatigable exertions in Burma led to so many fine species being shipped to England.

BICTONIEN'SIS-E—Refers to Bicton, the Estate of Lord Rolle, of England.

BLU'MEII—In compliment to the celebrated Dr. Blume, whose researches in the East Indies have done so much for Botany.

BLUNT'II—Commemorates the services rendered to Botany by Mr. Blunt, who, during the years 1862-1864 collected plants in Brazil and other South American countries.

BRASSAVO'LA—In honor of Antonio Musa Brasavolus, or Brassavolus, a noble Venetian, and one of the most enlightened botanists of his day. About 400 years ago he published "Annotations upon the Aphorisms of Hippocrates."

BRASS'IA—So named by Robert Brown, in commemoration of Mr. Brass, a skillful botanist, who, in 1790 and following years, collected plants in Africa.

CALAN'THE (Gr.) Lovely Flower.

CATT'LEA—In Honor of Wm. Cattley, Esq. of England. A celebrated cultivator of orchids, one of the earliest amateur-growers.

CAVENDISH'IANUM }
CAVENDISH'II } In compliment to Wm. Spencer Cavendish, sixth Duke of

Devonshire, the constructor of Chatsworth, in regard to its Botany, and renowned for his encouragement of first-class floriculture.

CEBOLLE'TA—The leaves of the oncid so called resemble those of the Chive, the French name of which is *ciboullete*.

CERVANTE'SII—Bestowed by Lallave upon the odontoglot so called, in compliment to the Spanish botanist, Vincente Cervantes.

CHY'SIS (Gr.) Anything melted—the pollen seeming to be fused together.

CITROS'MUM (Gr.) Citron-scented.

COELOG'YNE (Gr.) Literally "hollow-stigma," in reference to the cavity in the column.

CON'COLOR—Properly signifies agreeing in color with some other and different thing, as when Ovid says that the color of the flower into which Adonis was changed, was *concolor* with his blood. As employed in Botany, it denotes uniformity of hue in the sepals and petals.

CORDATE }
CORDAT'UM } Shaped like the "heart" upon playing-cards.

CYPRIPED'IIUM (Gr.) Literally "Venus' slipper," Cypris having been one of the names of that famous and favorite goddess. In conformity with the custom which prevailed after the revival of learning, many things originally dedicated to Venus were transferred to "our Lady," Notre Dame, the Virgin Mary. Hence we find the European *Cypripedium* formerly bearing the name of *Calceolus Marianum*, "the slipper of our Lady," which is now called "Lady's Slipper."

DECIDUOUS—Applied to organs of any kind which, after fulfilling their functions, disarticulate or detach themselves bodily from the part they were attached to, and fall to the ground, as tree-leaves in autumn, and the sepals, petals and stamens of a poppy.

DENDROBIUM (Gr.) Literally, that which inhabits the trees.

DIGBYAN'A—In compliment to Edward St. Vincent Digby, Esq., of England, with whom, in 1846, the *Brassavola Digbyana* first flowered.

DIS'COLOR—When the two surfaces of a leaf or petal are of two different colors.

DORSAL—Behind, or at the back of anything.

DOWIAN'A—In compliment to Capt. J. M. Dow, of the American Packet-service, a gallant officer, and a great friend to the naturalists who visited the western coasts of the Pacific.

EBUR'NEUM—Ivory-like.

EL DORA'DO—The famous though fabulous country described by Francis Orellana, companion of Pizarro, when the imagination of Spain saw nothing beyond the Atlantic excepting gold, "el dorado" signifying literally the golden or gilded. Well applied to that splendid *Cattleya* the lip of which seems to hold a plate of the burnished metal.

EL'EGANS—Very choice and attractive—worthy of being chosen.

EPIDEN'DRUM (Gr.) Literally "upon a tree," referring, like *Dendrobium*, to the habitat. This name should of course follow the rule observed in *Rhododendron*, *Clerodendron*, etc., and all others of corresponding derivation, and be written *Epidendron*. Originally it was the generic name of nearly all the tree-orchids.

FIMBRIA'TUS-A-UM—Fringed.

GLAU'CUS-A-UM—Green, with the addition of a peculiar blueish-white, as in the foliage of carnations.

HUMBOLDT'I—Connects the plant with the memory of the greatest botanical traveller and scientific naturalist of any age or any country.

IMBRICATED—So disposed that the edges overlap.

INSIG'NE—Noble, admirable, conspicuous.

LABIA'TUS-A-UM—Large-lipped.

LAE'LIA—Caius Laelius was a noble Roman, B. C. 141. Laelia, the elder of his two daughters, was celebrated for the purity with which she spoke her native language, and which gave the tone to the conversation of the polished society of her age; it was equally distinguished for its sincerity and earnestness. The beautiful genus of orchids to which her pleasing name has been applied, similarly discloses the highest qualities of the order.

LEOPOL'DI—In compliment to Leopold I, whose garden at Laeken was noted for its splendid orchids.

LIN'DENI—In compliment to M. Linden, the celebrated horticulturist of Brussels and Ghent. M. Linden spent many years collecting plants in Mexico, the West Indies, Peru, Brazil, etc.

LINDLEYAN'UM—In compliment to Dr. Lindley. In connection with his enthusiastic love of orchids, it is well to remember that it was bestowed equally upon large-flowered and small-flowered, the former more grand to behold, but marvelous structure pertaining rather to the pigmies, as in *Oberonia* and *Bulbophyllum*.

LODDIGE'SII—Commemorates the honored names of "Conrad Loddiges & Sons", known for a long period as proprietors of one of the most famous nursery gardens in the world—Hackney, near London. Mr. William Loddiges, the last of the original firm, died December 28, 1849. The business was continued by the nephews until September 1852, when the Crystal Palace Company purchased a large portion of their stock. The matchless collection of orchids was disposed of during 1856. In 1843, their catalogue of these plants (of which Messrs. Loddiges were probably the first professional growers) included about 1800 names, and in 1844 it had risen to no less than 1916! What a contrast with A. D. 1815, when the Kew collection numbered only 25! Many of those 1916, no doubt, exist no longer in cultivation, partly because they were interesting only to botanists.

LOWI—Commemorates the horticultural enterprise and well-deserved success of the distinguished firm known all over the world originally as Hugh Low and Sons, of England. Sometimes the name refers to Mr. Hugh Low himself, sometimes to his eldest son of the same name, who resided for some years in Borneo, from whence he sent home some very fine plants, in other cases, to one of the younger sons, Mr. Stuart H. Low.

LUDDEMANNI'ANA—In compliment to M. Luddemann, once Director of the once celebrated orchid-establishment of M. Pescatore, Celle-St.-Cloud, Paris.

LYCAS'TE—The name of a celebrated beauty, perhaps mythological, who is said to have lived at Drepanum, in Sicily. Given to this genus because of its corresponding charms.

MACKAY'I—In compliment to the late Mr. J. T. Mackay, of the Trinity College Botanic Garden, Dublin, the Nestor of Irish botanists.

MAJALIS—Flowering in the month of May.

MAXILLA'RIA—So named by the authors of the "Flora Peruviana", because of a certain resemblance between the column and the lip of the flower, and the jaws or maxillae of insects.

MILTO'NIA—In compliment to Viscount Milton, his Estate being one of the first places in England where the beauty of orchids was developed upon a large scale.

MOS'SIAE—In compliment to Mr. Thomas Moss, of Liverpool, England, who some hundred years ago was an assiduous orchid-grower.

ODONTOGLOSS'UM (Gr.) Literally "tooth-tongued", referring to the singular form of the labellum.

ONCID'IUM (Gr.) Refers to the tubercles or protuberances at the base of the lip.

PAPIL'IO—A butterfly.

PERISTE'RIA (Gr.) Literally, a dove.

PHAI'US (Gr.) Dusky, a name applied by Loureiro to the *Ph. grandifolius* in allusion to the inside color of the flowers.

PHALAE'NOP'SIS (Gr.) Literally "moth-image", the flower suggesting the idea of some strange lepidopterous insect.

PURPURA'TUS-A-UM—Arrayed or clad in purple, so as to carry a certain queenliness, as in *Laelia purpurata*.

QUINQUEVUL'NERUM—Literally having five wounds; referring, in *Aerides* q., to the red spot, like effusion of blood, at the extremity of each of the five perianth-lobes.

RACEME—A form of inflorescence in which numerous flowers, provided with pedicels, are disposed, more or less closely, along a usually drooping stalk. In orchids very frequent.

SANGUIN'F'US-A-UM—Blood-colored.

SCAPE—A leafless flower-stem.

SCHLIEPERIA'NUS-A-UM—In compliment to M. Adolphe Schlieper, a zealous cultivator of orchids.

SEPALS—The pieces of the calyx, or outer portion of the flower; in orchids invariably petaloid and colored, three in number, and usually quite free and distinct. Sometimes, as in *Cypripedium*, two of them are united by the edges, forming the dorsal sepal.

SESQUIPEDA'LE—A foot and a half, or 18 inches long.

SOBRA'LIA—In honor of F. M. Sobral, a Spanish botanist.

SOPHRONI'TIS (Gr.) Literally, modest, decorous, unassuming.

SPECIOSIS'SIMUS-A-UM—In the highest degree handsome and ornamental, uniting elegance of form and brilliancy of color.

SPECTAB'ILIS-E—Deserving special notice, by reason of intrinsic worth.

STANHOPE'A—In compliment to the Earl of Stanhope.

SUA'VIS-E—Sweet-scented.

TERES (Terete)—Long and perfectly cylindrical, without any angles, like a lead-pencil.

TRIA'NAE—In compliment to the distinguished botanist, Signor Triana, who collected plants in South America.

VANDA—According to Sir William Jones, Vanda, in the Sanscrit language, denotes the consecrated mistletoe of the oak, (the Druidical history of the plant in England being no more than the western phase of something still more ancient), while the oak itself is *Vandaca*. From the mistletoe the name was extended to parasites and epiphytes in general, but always with an addition, *Baculavanda* denoting the *Loranthus*, and *Amaravanda* a tree-orchid, the latter term corresponding with the Malayan *angrec*.

VEITCH'II—Commemorates the immense and brilliantly successful enterprise as horticulturists in England and as promoters of plant-discovery in distant countries, of several generations of the honored family of Veitch, sometimes one member of the family and sometimes another. Mr. James Veitch, head of the firm until 1869, died that year, and Mr. John Gould Veitch was distinguished for his work in Japan and the South Sea Islands.

WAGNERI—In honor of M. Wagner, a German collector.

WARSCIEWICZ'II—In compliment of the adventurous and indefatigable M. Von Warszewicz, well known as an orchid collector in Central America.

ZYGOPET'ALON (Gr.) Literally "yoke-petal," referring to the basal cohesion of the segments of the perianth.

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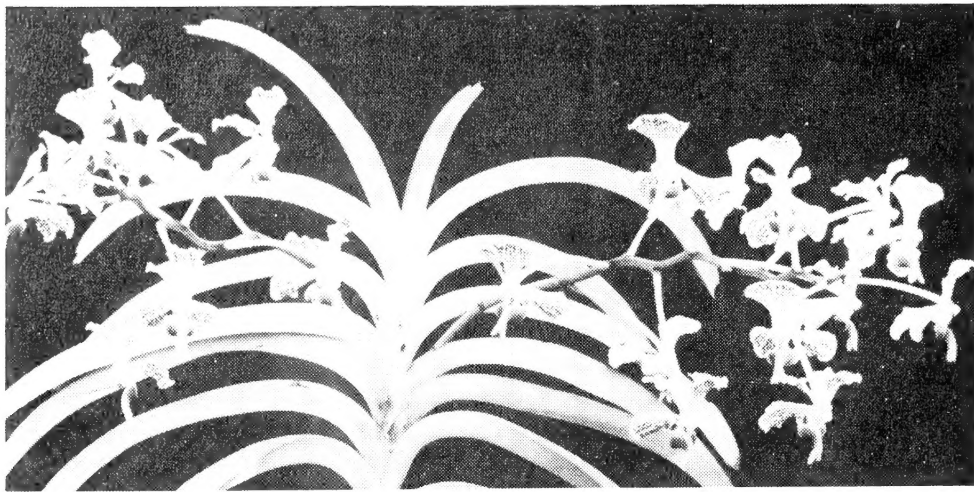
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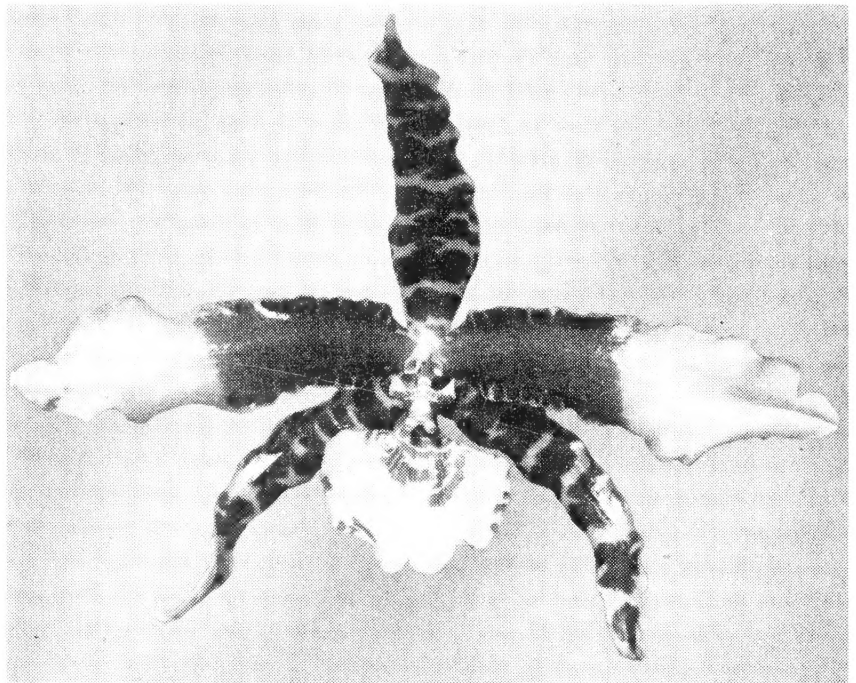
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CYPRIPEDIUM INSIGNE, 14 inch pot

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